

least 350 km of largely inhospitable habitat. It is possible that they may be relicts from a more continuous range in the past, presumably during the Pleistocene glaciation. This scenario could account for the divergence in bract tip coloration. However, it might be suggested that the Arizona isolates should have diverged more significantly from the main species in some tens of thousands of years.

Another hypothesis is that *Castilleja attenuata* was introduced through human activity, either intentional or unintentional. It seems unlikely that this relatively nondescript and insubstantial species would have been consciously introduced. Some minor support is provided for an unintentional introduction scenario by the fact that all of the known Arizona populations are very close to roadways. The existence of the apparently introduced populations in Peru and Chile also lend some support to the likelihood of an origin by unintended human introduction for the Arizona populations.

Comments on the Conservation Status of Castilleja attenuata in Arizona. While this species is abundant in many parts of its range, its status as a component of the flora of Arizona is open to some question and concern. While it does show some evidence of an ability to colonize new areas, *C. attenuata* exhibits none of the characteristics one would associate with an invasive weed. It is strongly limited to very specific native habitats, and this appears to be especially true of the Arizona populations. The few known sites for this species in Arizona should be regularly monitored, as changes in the hydrology of the sites, development for agriculture or construction, and trampling by livestock and/or ORVs could all cause these populations to decline or to become extirpated.

I express my appreciation to C. Hamilton (WTU) for helpful comments on this note and to the curatorial staff at ARIZ, ASC, ASU and DES herbaria for the timely loan of specimens.

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NOTEWORTHY COLLECTIONS

ARIZONA

BERBERIS HARRISONIANA Kearny and Peebles (BERBERIDACEAE)—Maricopa Co., Sand Tank Mountains, one mile southwest of Squaw Tit, at 32°40'N, 112°24'W. About two dozen shrubs, averaging one meter tall, some in flower, in shady north-facing alcove in tertiary volcanics, along rocky drainage with *Vauquelinia californica* and *Juniperus erythrocarpa*. T9S, R1W, Sect. 6, S½, 1050 m, 2 Jan 1995, J. Malusa, ARIZ.

Significance. *Berberis harrisoniana*, the Kofa Mt. Barberry, was previously known from only two locales—the Kofa Mts. and the Ajo Mts., also in western Arizona (LaFerriere, J., Berberidaceae. Jour. of Ariz.-Nev. Acad. Sci. 26(1):2–4, 1992). Both in the Ajos and the Kofas it has been collected in only two canyons, where there is sufficient relief to provide a relatively mesic microhabitat. The surrounding land receives 5 to 10 inches of precipitation annually. The new population described here, in the Sand Tank Mts., is about 45 miles north of the Ajo Mts., and 120 southeast of the Kofa Mts. Hence, the three locales likely to have no genetic communication. Despite its highly restricted distribution, *Berberis harrisoniana* has no obvious threats,

and its Federal status is Category 3C, i.e., considered for listing, but deemed not threatened. It is protected by the absence of roads, people, and livestock.

—JAMES MALUSA, Department of Ecology and Evolutionary Biology, University of Arizona, Tucson 85721.

CALIFORNIA

GASTROCLONIUM COMPRESSUM (Hollenb.) C. F. Chang & B. M. Xia (CHAMPIACEAE).—Marin Co., Tomales Bay, Tomales Beach. 122°82'W, 38°10'N in midtidal to lower intertidal, growing on the bottoms and the sides of 20–50 kg. rocks, with *Polysiphonia pacifica*, epiphytic on *Chondracanthus canaliculatus*, 9 Aug 1994, J. Hughey and F. Perez (NCC, UC).

Previous knowledge. The distribution of this alga is from Baja California to the Monterey Peninsula (I. A. Abbott and G. J. Hollenberg, *The Marine Algae of California*, 1976).

Significance. Extends distribution ca. 190 km N.

CENTROCERAS CLAVULATUM (C.Ag) Mont. (CERAMIACEAE).—Marin Co., Tomales Bay, Avalis Beach. 122°94'W, 38°14'N, lower intertidal, saxicolous and epiphytic on *Neorhodomela larix*, 7 Jan 1994, J. Hughey (NCC, UC); Tomales Bay, Nick's Cove. 122°82'W, 38°12'N, lower intertidal, saxicolous, with *Gratelouphia setchelii* and *Prionitis lanceolata*, 26 May 1994, J. Hughey (UC).

Previous knowledge. The northern distribution limit of this broadly distributed red alga is reported to be Santa Cruz, California (I. A. Abbott and G. J. Hollenberg, *The Marine Algae of California*, 1976).

Significance. Extends distribution ca. 160 km N. This alga was collected in a sand-swept, semi-exposed locality at Avalis Beach and in a sheltered locality at Nick's Cove. The regular, narrowly divaricate dichotomies of *Centroceras clavulatum* distinguish it in the field from species of *Ceramium*.

FUCUS SPIRALIS L. (FUCACEAE).—Marine Co., Tomales Bay, White Gulch. 122°88'W, 38°12'N, high intertidal, saxicolous and on partly buried logs, with *Pelvetiopsis limiflata*, mostly at a higher level than *Fucus gardneri* plants though partly intermixed with them, 6 Feb 1994, J. Hughey (NCC, UC).

Previous knowledge. This brown alga, which is common and abundant in the North Atlantic, was reported for the Pacific Coast for the first time twenty years ago (R. E. Norris and E. Conway, *Sysis*, 7:79–81, 1974). Norris and Conway cited specimens from the Aleutians to northern Washington. According to Silva, Deew, and Rasmussen (personal communication), the species also occurs in Humboldt Bay.

Significance. Extends distribution ca. 320 km S. *Fucus spiralis* can be distinguished from *F. gardneri* by its spiraling thallus, strongly distinct and percurrent midrib, and lack of caecostomata. In examination of 10 plants of each species, I found no caecostomata in 450 transverse sections of *F. spiralis* and 107 caecostomata in 250 transverse sections of *F. gardneri*.

—JEFFERY R. HUGHEY, Department of Biology, Sonoma State University, Rohnert Park, CA 94928.

SONORA

THERMOPSIS MONTANA Nuttall ex Torry & A. Gray var. *MONTANA* (FABACEAE).—Sonora, Sierra de los Ajos, Arroyo Frijolito, 30°57'N, 109°57'W, elev. 2075 m, east-facing slope near canyon bottom in pine-oak forest with *Abies concolor*, *Quercus*

arizonica, *Populus tremuloides*, *Fraxinus*, *Rhus*, *Senecio*, and *Malaxis ehrenbergii*, 9 Oct 1992, *Mark Fishbein* 737, *Richard S. Felger*, *Florentino Garza Salazar*, *Martín Haro Rodriguez* (ARIZ).

Previous knowledge. This variety is widespread in the intermountain region of the western United States, from Oregon southeast to New Mexico (C. J. Chen, M. G. Mendenhall, and B. L. Turner, Annals of the Missouri Botanical Garden 81:714–742, 1994). The nearest known population to the new collection occurs approximately 125 km to northeast in the Chiricahua Mountains of southeastern Arizona.

Significance. First report of this genus from México. This is the third record of a species known in México only from the Sierra de los Ajos (Madroño 40:270–271, 1993; M. Fishbein, R. S. Felger, and F. Garza Salazar in DeBano and Folliot, Proceedings of the Conference on Biological Diversity and Management of the Madrean Archipelago, USDA Forest Service General Technical Report, in press).

—MARK FISHBEIN, Herbarium and Department of Ecology and Evolutionary Biology, University of Arizona, Tucson, AZ 85721 and RICHARD S. FELGER, Drylands Institute, 2509 N. Campbell #126, Tucson, AZ 85719.

ASCLEPIAS LEMMONI A. Gray (ASCLEPIADACEAE).—Near La Huerta, N side of Sierra de Alamos, ca. 4 km SW of Alamos, 26°59'15"N, 108°58'30"W, 1200 m, rare tall perennial herb in recently burned oak woodland, *V. W. Steinmann* 93-336 (27 Aug 1993, ARIZ).

Previous knowledge. Mountains of Cochise and Pima counties, Arizona, southward in the Sierra Madre Occidental to Chihuahua, Durango, Jalisco, and Sinaloa. The only previous Sonoran locality is the Sierra San Jose, just S of Naco, Cochise County, Arizona.

Significance. Second Sonoran locality and a range extension of 450 km to the south in Sonora.

CYNANCHUM WIGGINSII Shinners (ASCLEPIADACEAE).—North side of Sierra de Alamos, vic. 26°59'30"N, 108°58'W, 900 m, twining herb in oak woodland, *V. W. Steinmann* s.n. (19 Aug 1992, ARIZ, det. M. E. Fishbein); Palm Canyon, 11.1 km SE of Magdalena on road to Cucurpe, Sierra Babiso, 1100–1200 m, 30°29'N, 110°46'W, *T. R. Van Devender* s.n. (2 Oct 1976, ARIZ), *T. R. Van Devender* s.n. (16–17 Jul 1977, ARIZ), *G. Starr* 180, *T. R. Van Devender* (14 Aug 1983, ARIZ).

Previous knowledge. Type specimen collected at Santa Cruz, Sonora, near Arizona border, but most previous records in Cochise and Santa Cruz counties, Arizona. U.S. Fish and Wildlife Service Category 2 candidate species.

Specimens from Arroyo Guajaray (*H. S. Gentry* 1098) and San Bernardo (*H. S. Gentry* 1298) in the Rio Mayo region reported as *Basistelma angustifolium* (Torr. & A. Gray) Bartl. (a synonym of *C. wigginsii*) were annotated to *C. arizonicum* (A. Gray) Shinners by M. E. Fishbein.

Significance. A southern range extension of 450 km. Second and third Sonoran localities.

ABUTILON PARISHII S. Wats. (MALVACEAE).—4 km NE of El Batamote, 46 km N of Hermosillo road, 29°39'30"N, 111°00'05"W, 480 m, uncommon herbaceous perennial in rocks under trees and shrubs on granitic hills with Sinaloan thornscrub, *T. R. Van Devender* 92-3, *J. F. Wiens* (26 Jan 1992, ARIZ, TEX); common on steep volcanic slope and cliff bases, Rancho Las Víboras, Cerro Colorado, ca. 7.8 km SSW of Hermosillo, 28°58'15"N, 110°59'45"W, 240 m, *T. R. Van Devender* 94-858, *C. Peñalba* (20 Nov 1994, ARIZ, ASU, SON); steep ESE rhyolitic tuff slope and on a gentle slope in Sinaloan thornscrub, Cerro del Yeso, 28°50'30"N, 110°59'30"W, 200–300 m, *J. F. Wiens* 92-607, *C. D. Bertelsen* (7 Nov 1992, ARIZ, ASU); common on gentle SSE rhyolitic slope of riparian canyon bottom, Cañon Nacapule, 4.8 km N of San

Carlos, 27°59'25"N, 111°04'15"W, 120 m, *C. D. Bertelsen* 92-121, *J. F. Wiens* (28 Sept 1992, ARIZ, SON); common on gentle rhyolitic tuff slope, on moderate SSW-W rhyolitic tuff slope, Sinaloan thornscrub, road to Microondas Las Avispas, Sierra Libre, ca. 65 km N of Guaymas, 28°29'40"N, 111°00'40"W, 595 m, *J. F. Wiens* 92-599, *C. D. Bertelsen*, and *J. F. Wiens* 92-611, *C. D. Bertelsen* (7 Nov 1992, ARIZ, ASU).

Previous knowledge. Thought to be endemic to Pima, Santa Cruz, and Yavapai counties, Arizona. U.S. Fish and Wildlife Service Category 2 candidate species.

Significance. First Sonoran Mexican localities. A southern range extension of 250 km from the nearest Arizona population in Peck Canyon, Tumacacori Mountains, Santa Cruz County.

—THOMAS K. VAN DEVENDER, Arizona-Sonora Desert Museum, 2021 N. Kinney Road, Tucson, AZ 85743; VICTOR W. STEINMANN, Herbarium, University of Arizona, Tucson, AZ 85721; JOHN F. WIENS, Arizona-Sonora Desert Museum, Tucson, AZ 85743; C. DAVID BERTELSEN, 2503 E. Blackledge, Tucson, AZ 85716.

BLECHUM PYRAMIDATUM (Lam.) Urb. (ACANTHACEAE).—Several localities on the Río Cuchujaqui: Near junction with Arroyo El Mentidero, 11 km S of Alamos, 26°55'N, 108°55'W, 260 m, locally common herbaceous perennial, tropical deciduous forest, *T. R. Van Devender* 92-212 (4 Feb 1992, ARIZ, CAS); Rancho El Conejo, 13.4 km SSW of Alamos, 26°54'00"N, 108°55'05"W, 240 m, common in shady understory, *T. R. Van Devender* 92-621 (8 May 1992, ARIZ, UCR); Güirocoba crossing, 12.3 km SSE of Alamos, 26°56'15"N, 108°53'W, 200 m, uncommon along river, *T. R. Van Devender* 514 (5 May 1992, ARIZ); Rancheria crossing, ca. 22.5 km S of Alamos, 26°51'N, 108°55'W, 200 m, locally common on bank, *T. R. Van Devender* 92-692, *S. L. Friedman* (3 Jul 1992, ARIZ, CAS); Alamos, 27°01'N, 108°50'W, 360 m, flower bed along street, *T. R. Van Devender* 94-204 (16 Mar 1994, ARIZ); dets. T. F. Daniel.

Previous knowledge. From E and S Mexico throughout Central America, West Indies, and South America; also in Guam, Formosa, and the Philippines.

Significance. First Sonoran records.

BEGONIA PALMERI S. Wats. (BEGONIACEAE).—Río Cuchujaqui, upstream of junction with Arroyo El Mentidero, 12.3 km S of Alamos, 26°54'45"N, 108°55'05"W, 240 m, locally common in tropical deciduous forest, shady N-facing cliff, *T. R. Van Devender* 92-957, *A. C. Sanders*, *J. F. Wiens* (5 Oct 1992, ARIZ, CAS, TEX); Arroyo El Huirotal, slopes of Sierra de Alamos, 26°56'15"N, 108°57'W, 650 m, common herbaceous perennial on shady slope, tropical deciduous forest, *T. R. Van Devender* 92-1316, *E. López-S.*, *S. A. Meyer* (13 Oct 1992, ARIZ, NOLS, UCR), *S. A. Meyer* s.n. (29 Aug 1993a, ARIZ, ASU, UCR, det. K. Burt-Utley), and *T. R. Van Devender* 94-537, *S. A. Meyer*, *J. F. Wiens* (12 Sept 1992, SON); Arroyo El Cobre, Choquincachui, 26°58'43"N, 108°40'53"W, 560 m, perennial herb on shady bank, *T. R. Van Devender* 94-733, *D. A. Yetman* (23 Sept 1994, ARIZ); perennial herb on N-slope in canyon bottom, pine-oak woodland, Sierra Sahuaribo, 1–2 km NE of El Chiribo, *V. W. Steinmann* 93-265, *M. E. Fishbein*, *D. A. Yetman* (23 Aug 1993, ARIZ).

Previous knowledge. Described from *E. Palmer* 139 collected in 1886 from Hacienda San Miguel, southwestern Chihuahua.

Significance. First Sonoran records.

ACMELLA OPPOSITIFOLIA (Lamarck) R. K. Jansen var. *OPPOSITIFOLIA* (COMPOSITAE).—Río Cuchujaqui near the junction with Arroyo El Mentidero, 12.3 km S of Alamos, 26°54'45"N, 108°55'05"W, 240 m, rare, moist shady area at edge of river, tropical deciduous forest, *T. R. Van Devender* 93-83 (10 Mar 1993, ARIZ, CAS, SD, TEX, UCR); Near junction of Arroyo Alamos and Río Cuchujaqui, 9 km SE of Alamos, 26°57'40"N, 108°52'30"W, 280 m, tropical deciduous forest, locally com-

mon, moist soil near stream, *T. R. Van Devender 93-1405*, *J. F. Wiens* (27 Nov 1993, ARIZ, ASU, SON); along Arroyo Alamos, on E edge of Alamos, 27°00'45"N, 108°55'20"W, 400 m, locally common in moist soil, *T. R. Van Devender 92-1303*, *E. López-S.* (12 Oct 1992, ARIZ, ASU, CAS, TEX); 3 km W Bacobampo, Municipio de Etchojoa, 26°59'N, 109°40'W, 5 m, *A. C. Sanders 13586* (22 Mar 1993, UCR).

Previous knowledge. Common perennial herb in wet areas throughout tropical Latin America.

Significance. First Sonoran records.

BLUMEA VISCOSA (Mill.) D'Arcy (COMPOSITAE).—Rancheria crossing, Río Cuchujaqui, 22.5 km S of Alamos, uncommon herb along river, *T. R. Van Devender 84-217* (21 Apr 1984, ARIZ, det. G. Nesom); Arroyo El Mentidero, 11.3 km S of Alamos, 26°54'45"N, 108°55'05"W, 240 m, uncommon on shady bank just above stream, *T. R. Van Devender 92-551*, *S. A. Meyer* (6 May 1992, ARIZ, TEX, UCR); Teachibe de Masiaca, Arroyo Masiaca, Municipio de Navojoa, 26°47'10"N, 109°14'W, 75 m, solitary in moist soil at edge of stream, *T. R. Van Devender 94-366*, *R. A. López-E., D. A. Yetman* (18 Apr 1994, ARIZ).

Previous knowledge. Uncommonly found in roadsides, fields, and clearings 600–900 m or less along W coast of Mexico from Sinaloa S and E to Morelos and Veracruz, S to Central America, the West Indies and Ecuador.

Significance. First Sonoran records.

ELEPHANTOPUS SPICATUS (Aubl.) Rohr. (COMPOSITAE).—El Cajón, Río Cuchujaqui, near Rancho Palo Injerto, 15.6 km E of Alamos, 27°02.8'N, 108°44'W, 400 m, in a short tree forest, *P. D. Jenkins 91-74* (12 Mar 1991, ARIZ); Güirocoba crossing, Río Cuchujaqui, 10 km ESE of Alamos, 27°56'30"N, 108°50'W, 280 m, rare herbaceous perennial near stream under *Taxodium*, *T. R. Van Devender 92-575* (5 May 1992, ARIZ, UCR); Guayabo crossing, Río Cuchujaqui, 1.8 km NE Sabinito Sur, 14 km ESE of Alamos, 27°00'N, 108°47'45"W, 340 m, abundant herb near stream, tropical deciduous forest, *T. R. Van Devender 92-235* (5 Feb 1992, ARIZ, TEX).

Previous knowledge. An herb of disturbed areas, from Sinaloa, Nayarit, Jalisco, and Michoacán, to E Mexico, the West Indies, Central America, and French Guiana.

Significance. First Sonoran localities.

EUPATORIUM ODORATUM L. (COMPOSITAE).—Arroyo El Mentidero, 11.3 km S of Alamos, 26°54'45"N, 108°55'05"W, 240 m, solitary shrub in tropical deciduous forest, *T. R. Van Devender 93-1318*, *S. L. Friedman* (25 Nov 1993, ARIZ, ASU, CAS, SON, TEX, UCR, det. R. K. Van Devender); on road to Alamos, ca. 600 m, *L. Mankel s.n.* (ASU, B. L. Turner).

Previous knowledge. From Sinaloa, Texas, and Florida south to Nayarit, Jalisco, Colima, and Michoacán, and further south into tropical America.

Significance. First Sonoran records.

PECTIS UNIARISTATA DC. (COMPOSITAE).—Guayabo crossing, Río Cuchujaqui, 14 km ESE of Alamos, rare annual in gravel in streambed, tropical deciduous forest with *Taxodium*–*Salix* gallery forest along stream, 27°00'05"N, 108°47'08"W, 350 m, *T. R. Van Devender 91-887*, *S. A. Meyer* (23 Oct 1991, ARIZ); Las Lajitas crossing, Río Cuchujaqui, 14.3 km ESE of Alamos, 26°59'N, 108°49'W, 320 m, common annual on bluff top above river, *T. R. Van Devender 92-1327*, *S. A. Meyer* (15 Oct 1992, ARIZ, ASU, CAS, NY, TEX, UCR).

Previous knowledge. Found in Sinaloa, Nayarit, Jalisco, Michoacán, Guerrero, and Morelos.

Significance. First Sonoran collection since Nov 1933, *H. S. Gentry 762M* at Güirocoba.

CUSCUTA BOLDINGHII Urban (CONVOLVULACEAE).—Güirocoba crossing, Río Cuchujaqui, 12.3 km SSE of Alamos, 26°56'15"N, 108°53'W, 260 m, uncommon on

Dicliptera resupinata and *Sida* sp., sandbars above river, tropical deciduous forest with *Taxodium*–*Salix* gallery forest along stream, *T. R. Van Devender* 92-31 (28 Jan 1992, ARIZ, UC), det. K. J. Johnson, ver. T. Beliz.

Previous knowledge. Yucatán, Veracruz, Michoacán, Guerrero, to the West Indies and Central America.

Significance. First Sonoran record.

CUSCUTA POTOSINA Schaffner var. *GLOBIFERA* Schaffner (CONVOLVULACEAE).—Ridge above Guayabo crossing, Río Cuchujaqui, 2.6 km NE of Sabinito Sur, 14 km ESE of Alamos, 27°00'05"N, 108°47'08"W, 370 m, common parasite on *Ayenia filiformis* and *Evolvulus alsinoides*, recently clear cut tropical deciduous forest, *V. W. Steinmann* 93-349, *S. A. Meyer*, *Van Devender* (21 Nov 1993, ARIZ, ASU, UC, UCR), det. T. Beliz.

Previous knowledge. Arizona and New Mexico. Central and S Mexico.

Significance. First Sonoran record.

IPOMOEA MEYERI (Spreng) G. Don (CONVOLVULACEAE).—Rancheria crossing, Río Cuchujaqui, ca. 22.5 km S of Alamos, 26°51'N, 108°55'W, 200 m, common annual on dense bank, tropical deciduous forest, *T. R. Van Devender* 92-1149 (10 Oct 1992, ARIZ, FAU, UCR); Güirocoba crossing, Río Cuchujaqui, 12.3 km SSE of Alamos, 26°56'15"N, 108°53'W, 260 m, solitary in shady canyon, tropical deciduous forest, *T. R. Van Devender* 92-914, *A. C. Sanders*, *J. F. Wiens* (4 Oct 1992, ARIZ); dets. V. W. Steinmann, D. A. Austin.

Previous knowledge. Sinaloa S through most of tropical Mexico, Central and South America, the West Indies.

Significance. First Sonoran records.

MERREMIA QUINQUEFOLIA Hallier f. (CONVOLVULACEAE).—Güirocoba crossing, Río Cuchujaqui, 12.3 km SSE of Alamos, 27°56'15"N, 108°53'W, 260 m, locally common vine on dense *Perityle microglossa* near river, *T. R. Van Devender* 92-522 (5 May 1992, ARIZ, det. K. J. Johnson, ver. D. F. Austin); Presa Mocúzari (Adolpho Ruiz Cortínez) on Río Mayo, WNW of Alamos, 27°13'10"N, 109°06'30"W, 120 m, locally common, to 3 m high in shrubs, *T. R. Van Devender* 92-1391 (16 Oct 1992, ARIZ, FAU, UCR); Arroyo Guajaráy, 6.5 km WNW of junction with Río Mayo, 27°36'N, 108°55'45"W, 270 m, tropical deciduous forest, rocky stream canyon below Guajaráy, *T. R. Van Devender* 93-429 and 93-454, *V. W. Steinmann*, *D. A. Yetman* (19 Mar 1993, ASU, ARIZ, FAU, UCR).

Previous knowledge. From Culiacan, Sinaloa, and Baja California, S Florida, the West Indies, and South America.

Significance. First Sonoran records.

CYPERUS DIFFORMIS L. (CYPERACEAE).—Arroyo El Mentidero, 11.3 km S of Alamos, 26°54'45"N, 108°55'05"W, 240 m, locally common perennial herb in shallow stream, canyon bottom, tropical deciduous forest, *T. R. Van Devender* 93-1307, *S. L. Friedman* (25 Nov 1993, ARIZ, NYSM), det. G. C. Tucker.

Previous knowledge. Scattered localities across the S United States, central Mexico, West Indies and South America. In Mexico it is known from Sonora, Sinaloa, Jalisco, Guanajuato, and Michoacán.

Significance. Only previous Sonoran record was Wright 1950 in 1851 from Santa Cruz, just north of the San Rafael Valley, Santa Cruz County, Arizona border (in 1851). Charles Wright collected in Santa Cruz County, then in Sonora, on the boundary survey prior to the Gadsden Purchase of 1853.

EUPHORBIA OCYMOIDEA L. var. *BARNESII* (Millsp.) McVaugh (EUPHORBIACEAE).—In shade near Rancho San Pedro, El Cajón, Río Cuchujaqui, 23 km E, 4 km N of Alamos, 27°02'N, 108°42'W, 450 m, *P. D. Jenkins* 89-414 (13 Mar 1989, ARIZ); Guayabo crossing, Río Cuchujaqui, 14 km ESE of Alamos, 27°00'05"N, 108°47'08"W,

350 m, rare at shady cliff base in tropical deciduous forest with *Taxodium-Salix* gallery forest along stream, *T. R. Van Devender 91-906*, *S. A. Meyer* (23 Oct 1993, ARIZ); in canyon above La Aduana, N side of Sierra de Alamos, 6 km W of Alamos, 27°01'20"N, 109°00'45"W, 850 m, rare annual in shady tropical deciduous forest understory, *T. R. Van Devender 90-622*, *S. A. Meyer* (30 Dec 1990, ARIZ), *T. R. Van Devender 92-242*, *V. W. Steinmann*, *S. L. Friedman* (5 Feb 1992, ARIZ), *T. R. Van Devender 93-1185*, *V. W. Steinmann*, *S. L. Friedman* (21 Nov 1993, ARIZ); tropical deciduous forest below Microondas La Luna, Cerro las Tatemas, 13.8 km NW of Alamos, 27°07'N, 109°02'W, 700 m, *A. C. Sanders 9462* (6 Sept 1989, ARIZ, UCR), and *P. D. Jenkins 90-277*, *P. S. Martin* (10 Oct 1990, ARIZ).

Previous knowledge. From Sinaloa, Tamaulipas, Michoacán and San Luis Potosí, to Veracruz and Guerrero, S through Central America to Panama.

Significance. First Sonoran records. Major northward range extension from Jalisco.

BOTHRIOCLOA PERTUSA (L.) A. Camus (GRAMINEAE).—Arroyo El Mentidero, 11.5 km S of Alamos, 26°54'55"N, 108°55'05"W, 240 m, disturbed roadside, tropical deciduous forest, *T. R. Van Devender 93-59* (9 Mar 1993, ARIZ), det. J. R. Reeder.

Previous knowledge. Occurring from North Africa to India and China, introduced into several United States Experimental Station sites but persisting only in S Texas.

Significance. First record for Sonora.

BOUTELOUA ALAMOSANA Vasey (GRAMINEAE).—Three localities in tropical deciduous forest along Río Cuchujaqui: junction with Arroyo Alamos, 11.3 km SE of Alamos, 26°57'30"N, 108°52'W, 280 m, uncommon on ledge above river, *T. R. Van Devender 91-751*, *S. A. Meyer* (27 Sept 1991, ARIZ); Güirocoba crossing, 12.3 km SSE of Alamos, 26°56'15"N, 108°53'W, 260 m, locally abundant on top of bluffs, *T. R. Van Devender 92-9044* (4 Oct 1992, ARIZ, ASU, CAS, SD, TEX); Guayabo crossing, 14 km ESE of Alamos, 27°00'05"N, 108°47'08"W, 350 m, locally common on top of bluffs, *T. R. Van Devender 93-1238*, *V. W. Steinmann*, *J. F. Wiens* (21 Nov 1993, ARIZ, ASU); dets. J. R. Reeder.

Previous knowledge. Mexico: Sonora, Chiapas, Oaxaca. Central America. Known from four localities in Sonora.

Significance. First collections from southern Sonora since September 1890 (the holotype: *E. Palmer 698*, near Alamos, US, NY, TAES). Considering that Palmer visited the Río Cuchujaqui in 1890 and that *B. alamosana* is restricted to depressions on volcanic benches along the river, the type specimens may well have come from the Güirocoba crossing. These localities are higher (260–350 m) than the “less than 100 m (at Alamos)” cited for the lower elevational limit for the species by Gould (1979; Ann Mo. Bot. Gard. 66:383).

DESMODIUM SCOPULORUM S. Wats. (LEGUMINOSAE).—Arroyo El Mentidero, 11.5 km S of Alamos, 26°54'55"N, 108°55'05"W, 240 m, solitary annual(?) herb in tropical deciduous forest on ledge, *T. R. Van Devender 93-848*, *D. A. Yetman*, *R. A. López-E.* (20 Sept 1993, ARIZ, NY, UCR), det. V. W Steinmann, ver. R. C. Barneby.

Previous knowledge. Previously only known from the type locality in mountains above Guaymas (*E. Palmer 258*, 1887), and 30 km N of Colorado on road to Mazatlán (*J. L. Wiggins*, *R. C. Rollins 370*, 1941).

Significance. A range extension of about 250 km to the SE.

DESMODIUM SCORPIURUS (Sw.) Desv. (LEGUMINOSAE).—Several localities for this herbaceous perennial in sand under *Taxodium mucronatum* in riparian gallery forests along the Río Cuchujaqui, tropical deciduous forest on slopes: Güirocoba crossing, 12.5 km SSE of Alamos, 26°56'15"N, 108°53'W, 260 m, *A. C. Sanders 3684* (25 Mar 1983, NY, UCR); Rancho El Conejo, 12.4 km S of Alamos, 26°54'35"N, 108°55'W, 240 m, very common near stream, *T. R. Van Devender 92-582*, *S. A. Meyer* (7 May 1992, ARIZ), *T. R. Van Devender 92-637* (8 May 1992, ARIZ, UCR); Rancheria

crossing, ca. 22.5 km S of Alamos, 26°51'N, 108°55'W, 200 m, *T. R. Van Devender* 92-1154, *A. C. Sanders* (10 Oct 1992, ARIZ); Guayabo crossing, 14 km ESE of Alamos, 27°00'05"N, 108°47'08"W, 350 m, uncommon along edge of disturbed road, *T. R. Van Devender* 92-1255, *E. López-S.* (12 Oct 1992, ARIZ, ASU, CAS, SON), *T. R. Van Devender* 93-200, *S. L. Friedman* (12 Mar 1993, ARIZ, ASU), *T. R. Van Devender* 94-291 (14 Apr 1994, ARIZ, SON); near Arroyo El Mentidero junction, 12.3 km S of Alamos, 26°54'45"N, 108°55'05"W, 240 m, uncommon, twining at the base of *Hymenoclea* at edge of river, *T. R. Van Devender* 93-92 (10 Mar 1993, ARIZ). Frijol de codorniz (Spanish), suvaqui muni (Mayo).

Previous knowledge. From Sinaloa S to Central America, West Indies, and South America. Old World tropics, where introduced, or Taiwan and the Philippines, perhaps native.

Significance. First Sonoran records.

MIMOSA DIPLOTRICHA C. Wright var. *ODIBILIS* Barneby (LEGUMINOSAE).—Guayabo crossing, Río Cuchujaqui, 14 km ESE of Alamos, 27°00'05"N, 108°47'08"W, 350 m, solitary annual in sand in streambed in *Taxodium*-*Salix* gallery forest, *T. R. Van Devender* 92-1284, *E. López-S.* (12 Oct 1992, ARIZ), det. R. C. Barneby.

Previous knowledge. A rare annual known from Chihuahua, Sinaloa, and Michoacán, and of considerably lower elevation than *H. S. Gentry* 2635, from 915 m at Cienegita, Chihuahua—the type of *Schrankia heterocarpa* Standl., a synonym.

Significance. First Sonoran record.

PHASEOLUS LUNATUS L. (LEGUMINOSAE).—Arroyo El Mentidero, 11.3 km S of Alamos, 26°54'45"N, 108°55'05"W, 240 m, solitary annual vine on *Senna pallida* in tropical deciduous forest, *T. R. Van Devender* 92-537, *S. A. Meyer* (6 May 1992, ARIZ, UCR) and *T. R. Van Devender* 94-184 (16 Mar 1994, ARIZ, ASU, NY, SON, UCR); below Guajaráy, Arroyo Guajaráy, 6.5 km (by air) WNW of junction with Río Mayo, 27°36'N, 108°55'45"W, 270 m, very common in tropical deciduous forest in rocky stream canyon, *T. R. Van Devender* 93-468, *V. W. Steinmann*, *D. A. Yetman* (19 Mar 1993, ARIZ, NY, SON).

Previous knowledge. Much of lowland tropical America, from Sinaloa, Nayarit, Jalisco, and Tamaulipas, south to Veracruz, Oaxaca, Central America, the West Indies, and South America.

Significance. First records for Sonora.

POLYPREMUM PROCUMBENS L. (LOGANIACEAE).—Arroyo El Mentidero, just above junction with Río Cuchujaqui, 11 km S of Alamos, 26°55'N, 108°55'W, 260 m, common along stream, *T. R. Van Devender* 92-180 (4 Feb 1992, ARIZ), *T. R. Van Devender* 92-949, *S. A. Meyer*, *A. C. Sanders* (4 Oct 1994, ARIZ, ASU, CAS, MO, SD, TEX, UCR), and *T. R. Van Devender* 93-1314, *S. L. Friedman* (25 Nov 1993, NY), det. P. D. Jenkins.

Previous knowledge. From SE U.S. and Mexico to the West Indies, Central America, and N South America

Significance. First Sonoran locality.

PASSIFLORA SUBEROSA L. (PASSIFLORACEAE).—Arroyo El Mentidero, 11.5 km S of Alamos, 26°54'55"N, 108°55'05"W, 240 m, solitary perennial vine in *Haematoxylon*, *T. R. Van Devender* 93-66 (10 Mar 1993, ARIZ, MO, UCR); Guayabo crossing, Río Cuchujaqui, 14 km ESE of Alamos, 27°00'05"N, 108°47'08"W, 350 m, rare in crack in ledge above river with *Taxodium*-*Salix* gallery forest along stream, tropical deciduous forest on slopes, *T. R. Van Devender* 93-1200 (21 Nov 1993, ARIZ); near Tojibampo, 19.5 km N of San Bernardo on the road to Mesa Colorada, 27°01'45"N, 108°46'45"W, 740 m, solitary in rocky canyon bottom, tropical deciduous forest, *T. R. Van Devender* 93-1500A, *R. A. López-E.*, *D. A. Yetman* (11 Dec 1993, ARIZ, ASDM [live], MO); dets. J. M. MacDougal.

Previous knowledge. From Florida, southernmost Texas, and the West Indies to Argentina. In Mexico, generally S and E of Guadalajara, with one photo record from Nayarit (J. M. MacDougal personal communication, 1993).

Significance. First Sonoran records.

PIPER JALISCANUM S. Wats. (PIPERACEAE).—Sierra de Alamos, 850 m, rare in shady rocky tropical deciduous forest canyon above La Aduana, *P. D. Jenkins* 89-444, *S. A. Meyer*, *P. Todd* (24 Dec 1989, ARIZ), *P. D. Jenkins* 90-248 (8 Oct 1990, ARIZ), and *T. R. Van Devender* 90-635, *S. A. Meyer* (30 Dec 1990, ARIZ, det. *P. D. Jenkins*); Guayabo crossing, Río Cuchujaqui, 27°00'05"N, 108°47'08"W, 350 m, solitary on rock in shady understory of tropical deciduous forest, *T. R. Van Devender* 93-1178 (21 Nov 1993, ARIZ); Güirocoba crossing, Río Cuchujaqui, 12.3 km SSE of Alamos, 26°56'15"N, 108°53'W, 260 m, solitary shrub in shady canyon in tropical deciduous forest, *T. R. Van Devender* 94-182 (11 Mar 1994, ARIZ).

Previous knowledge. Sinaloa, Nayarit, and Jalisco.

Significance. First Sonoran records.

CRUEA CORONATA Rob & Greenm. (RUBIACEAE).—Rancheria crossing, Río Cuchujaqui, 22.5 km S of Alamos, 26°51'N, 108°55'W, 200 m, rare annual in sandy, rocky river bottom, tropical deciduous forest, *T. R. Van Devender* 92-1189, *A. C. Sanders* (10 Oct 1992, ARIZ).

Previous knowledge. A rare plant known from Sinaloa, Jalisco, Guerrero, and Mexico.

Significance. First record for Sonora.

CRUEA PSYLLIOIDES (H.B.K.) W. R. Anderson (RUBIACEAE).—Arroyo El Mentero, 11.3 km S of Alamos, 26°54'45"N, 108°55'05"W, 240 m, rare annual in arroyo bottom, tropical deciduous forest, *T. R. Van Devender* 92-965 (5 Oct 1992, ARIZ); Rancho las Uvalamas, E side of Sierra de Alamos, S of Alamos, *S. A. Meyer* s.n. (2 Oct 1992, ARIZ).

Previous knowledge. Lower mountain slopes from S Sonora and Chihuahua to W Chiapas.

Significance. First Sonoran collections since 1933 (*H. S. Gentry* 428MG, Cañon Estrella, vic. Alamos).

DIODIA SARMENTOSA Sw. (RUBIACEAE).—Various localities in bottoms of stream canyons with tropical deciduous forest on slopes: Guayabo crossing, Río Cuchujaqui, 14 km ESE of Alamos, 27°00'05"N, 108°47'08"W, 350 m, *A. C. Sanders* 9399 (6 Sept 1989, UCR); upstream of Las Lajitas crossing, Río Cuchujaqui, 5.6 km ESE of Alamos, 26°59'N, 108°49'W, 320 m, *T. R. Van Devender* 92-786a, *S. A. Meyer*, *S. L. Friedman* (7 Jul 1992); Río Cuchujaqui at Rancho El Conejo, 13.4 km S of Alamos, 26°54'N, 108°55'W, 220 m, *T. R. Van Devender* 92-632 (8 May 1992, ARIZ, UCR, det. *K. J. Johnson*); Parque Chalaton, NE side of Sierra de Alamos, 27°00'55"N, 108°56'35"W, 420 m, *A. C. Sanders* 13268 (16 Mar 1993, UCR); Arroyo El Huirotal, E slopes of Sierra de Alamos, 11 km SSW of Alamos, 26°55'N, 108°55'W, 600 m, sprawling in streambed, tropical deciduous forest, *T. R. Van Devender* 90-657, *S. A. Meyer* (31 Dec 1990, ARIZ) and *T. R. Van Devender* 92-67 (30 Jan 1992, ARIZ, TEX, UCR); Rancho la Sierrita, E slopes of Sierra de Alamos, ca. 6 km SSW of Alamos, 26°58'30"N, 108°58'05"W, 925 m, *Martin* s.n. (27 Aug 1990, ARIZ, det. *V. W. Steinmann*); Arroyo Guajaráy, between Rancho La Junta on the Río Mayo and Guajaráy, 27°35'15"-27°36'N, 108°52'-108°55'45"W, 240 m, uncommon, *T. R. Van Devender* 93-414, *V. W. Steinmann*, *D. A. Yetman* (18 Mar 1993, ARIZ); uncommon in Arroyo El Cobre, Choquinahui, 26°58'48"N, 108°40'53"W, 560 m, *T. R. Van Devender* 94-720, *D. A. Yetman* (23 Sept 1994, ARIZ).

Previous knowledge. From S Mexico, and Guatemala, S and E to Panama, Guianas, and the West Indies.

Significance. First records for Sonora.

HEDYOTIS VEGRANDIS W. H. Lewis (Rubiaceae).—Güirocoba crossing of Río Cuchujaqui, 12.3 km SSE of Alamos, 26°56'15"N, 108°53'W, 260 m, rare annual on exposed bench above river, tropical deciduous forest, *V. W. Steinmann s.n.*, *C. M. Smith* (21 Aug 1992, ARIZ).

Previous knowledge. Baja California, Sonora, and Sinaloa.

Significance. First Sonoran locality since *J. L. Wiggins & R. C. Rollins 135* (1941), 16.9 km W of Hermosillo on road to Kino Bay.

ANEMIA AFFINIS Baker in Hook & Baker (Schizaeaceae).—Guayabo crossing, Río Cuchujaqui, 14 km ESE of Alamos, 27°00'05"N, 108°47'08"W, 350 m, locally common, on mossy boulder on shady bank near river in *Taxodium-Salix* gallery forest, tropical deciduous forest on slopes, *T. R. Van Devender 93-1169*, *V. W. Steinmann, S. L. Friedman* (21 Nov 1993, ARIZ, ASU, MO, UCR, det. G. Yatskievych); Arroyo Santa Barbara, Municipio de Alamos, 27°05.4'N, 108°43.3'W, 1000 m, in shady rocks along trail by stream, topical deciduous forest, *P. D. Jenkins 90-191* (6 Oct 1990, ARIZ); Ranch Agua Blanca, 28°59'00"N, 109°05'20"W, 1000–1100 m, on basaltic soils in Chihuahua oak woodland, *P. S. Martin s.n.* (6 Nov 1986, ARIZ); on broken volcanic rocks under oaks on slopes, oak woodland, 915–1067 m, *H. S. Gentry 19338* (16–18 Oct 1961, ARIZ).

Previous knowledge. In the Sierra Madre of Sonora, Sinaloa, Nayarit, and Jalisco.

Significance. First Sonoran localities with data.

NICOTIANA PLUMBAGINIFOLIA Viviani (Solanaceae).—Río Cuchujaqui near junction with Arroyo El Mentidero, 12.3 km S of Alamos, 26°54'45"N, 108°55'05"W, 240 m, moist sand, *T. R. Van Devender 92-682*, *S. L. Friedman* (2 Jul 1992, ARIZ, UCR); Rancheria crossing, Río Cuchujaqui, ca. 22.5 km S of Alamos, 26°51'N, 108°55'W, 200 m, moist soil at edge of stream, *T. R. Van Devender 92-700A*, *S. L. Friedman* (3 Jul 1992, observ.); upstream of Las Lajitas crossing, Río Cuchujaqui, 5.6 km S of Alamos, 26°59'N, 108°59'W, 320 m, moist soil near stream, *T. R. Van Devender 92-799A*, *S. L. Friedman, S. A. Meyer* (7 Jul 1992, observ.); Güirocoba crossing, Río Cuchujaqui, dry streambed, *T. R. Van Devender 84-169* (20 Apr 1984, ARIZ); Arroyo El Huirotal, E slopes of Sierra de Alamos, 7 km SW of Alamos, 26°56'15"N, 108°57'W, 550 m, shady rocky streambed in tropical deciduous forest, *T. R. Van Devender 92-757* (6 Jul 1992, ARIZ).

Previous knowledge. Wet sandy areas and in waste areas, from the Florida Keys, West Indies, Mexico, and Guatemala to South America.

Significance. First Sonoran records since 1948 (*H. S. Gentry 7941*, near Navojoa).

PHYLLOSTRIGULOSA (Mart. & Gal.) Moldenke (Verbenaceae).—Rancheria crossing, Río Cuchujaqui, ca. 22.5 km S of Alamos, 26°51'N, 108°55'W, 200 m, single dense patch in the shade of shrubs on river bank, *T. R. Van Devender 92-710*, *S. L. Friedman* (3 Jul 1992, ARIZ), det. A. D. Harlan.

Previous knowledge. Widespread from Rio Grande Valley of Texas, south to Central and South America, and the West Indies.

Significance. First Sonoran record. Nearest locality believed to be Culiacan, Sinaloa, 250 km to the south.

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ANNOUNCEMENT

A CALIFORNIA FLORA DATABASE NOW AVAILABLE

A database on California plant distributions is now available from the US Forest Service, Pacific Southwest Research Station. The California Flora Database contains nomenclature, geographic and ecological information for 6717 California vascular plant taxa, as well as additional habitat information for rare taxa and species of the Sierra Nevada. Each species-level taxon listed in *A California Flora and Supplement* (Munz and Keck 1968) is referenced in the database, plus additional records for infraspecific taxa listed in the CNPS Inventory of Rare and Endangered Vascular Plants of California (Skinner and Pavlik 1994).

The database is useful as a first step in developing local species and rare plant checklists, for creating broad overviews of species distributions, and for floristic analyses. The California Flora Database is useful to community groups, planning agencies, state and local agencies, consulting firms, and researchers.

The database is provided as a 2.2 mg ASCII file designed for easy import into the user's database software. The file is available for anonymous ftp at: s27w007.pswfs.gov/pub/ifg/calflora.txt

Corrections and additions are made periodically. Questions and comments can be addressed to:

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